

“Synchrotron Light provides the first clues that ARSACS might involve an altered metallome”.

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In recent years it has become clear that many human diseases involve alterations to the metallome. The metallome is defined as the total inventory of metal-containing species that are present in living tissues. An international team of researchers from the University of Saskatchewan, Michigan State University, Northwestern University, and the Argonne National Laboratory, has recently uncovered the first evidence that ARSACS may show a perturbed metallome. Using a method called synchrotron X-ray fluorescence imaging at both the Canadian Light Source and the Advanced Photon Source synchrotrons, the team found that regions of the brain in an ARSACS mouse model showed areas of copper accumulation. Copper has been called the Janus element, as it is essential for health, but can be toxic when unregulated. The team is currently in the process of repeating these results, comparing data from human fibroblasts, and examining whether other elements might also be perturbed.

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